FEDERAL STUDENT AID
We Help Put America Through School

FSA Modernization Partner

NSLDS II Reengineering Preliminary Design Executive Summary

Version 1.0

July 19, 2002

Table of Contents

Document Control

Version Number	Description	Release Date	Author
1.0	Initial Issue	July 19, 2002	Nate Brown

1 Executive Summary

1.1 Introduction

Pursuant to Modernization Partner Task Order 94, Work Order #2 – NSLDS II Reengineering Definition Phase, this is the deliverable entitled Preliminary System Design (94.2.2). This deliverable is the collection of requirements, design and planning documents that will be used as the basis for detailed design and implementation of NSLDS II Release 1. This summary is provided to give context for the NSLDS Reengineering effort, a brief description of the NSLDS II project, and short descriptions of the documents that comprise this deliverable.

1.2 Legacy NSLDS Background

The legacy NSLDS is a comprehensive repository of information about Title IV Aid recipients and their loans, grants, lenders, Guaranty Agencies (GAs), servicers, and schools. It provides an integrated view of Title IV loans and grants during all stages of their life cycle from aid approval through disbursement, repayment, delinquency, and closure.

As NSLDS has evolved since its implementation in 1994, it has become much more than an analytical and reporting system and, today, supports key operational requirements. Specific capabilities include:

- Determining student eligibility for Title IV student aid – both pre-screening and post-screening
- Calculating default rates for schools, guarantors and lenders
- Supporting financial management activities including:
  - Guaranty Agency LPIF and AMF payments
  - Budget formulation/execution and modeling
  - Reasonability of payments to guarantors and lenders
- Reporting student enrollment status
- Providing information to policy, research and other groups

The legacy NSLDS is an IBM DB2 database stored on an IBM 9672-R85 mainframe and includes transaction-level detail on loans and default rates, with referential relationships to students, GAs, lenders and school entities. It is a classic Online Transaction Processing (OLTP) design and includes normalized data structures in the 3rd normal form.

Legacy NSLDS is comprised of multiple databases created to serve different purposes.

- Active Database – Designed to hold loan-level information for open student/borrower accounts.
- Archive Database – Designed to hold loan-level information for closed student/borrower accounts.
- Online Statistical Abstract (STAB) Database – Created in response to research teams requesting a random and statistically valid sample of NSLDS data.

While the Active Database was designed to hold open loan-level information, it actually contains both open and closed loan-level information for student/borrower accounts. The Archive Database has never been populated with data.

1.3 Scope of NSLDS II Release 1

Currently, the legacy NSLDS is hampered by a number of challenges related to discrepancies between the quality and timeliness of its data and the system of record, as well as its operating costs. Given these challenges, a project to modernize the system – NSLDS II Reengineering – has been undertaken to retain the capabilities described above with the following objectives in mind:

- Improve financial integrity
- Reduce FSA costs associated with NSLDS and related operations
- Improve customer satisfaction through better quality and usability of NSLDS information, benefiting the Department and other NSLDS users in the financial aid community
- Balance FSA data needs with burdens placed on the financial aid community
- Improve usability of the NSLDS data repository through new tools
- Take greater advantage of data resources available within FSA and from the financial aid community

At the heart of NSLDS II Reengineering are five "big ideas". These ideas for reengineering NSLDS will require radically changing some of the underlying processes, data structures and technical platforms supporting the existing system. The NSLDS II Reengineering Release 1 project is focused on the two ideas surrounding the NSLDS technical infrastructure and internal FSA sources of data. These two ideas are:

- **Data Warehousing**, which provides for restructuring of the NSLDS data repository to support modern data mart analytical tools
- **Internal FSA Direct Access**, which supports more timely, "snapshot-in-time," views of FSA-maintained Title IV aid data and positions FSA systems to support a future FFEL and Perkins fetch capability by integrating NSLDS II more closely with the EAI Bus architecture

The remaining three "big ideas" will be addressed in the following phases of NSLDS Reengineering. These initiatives will build on the improvements achieved through NSLDS II Reengineering to further improve the data quality and customer satisfaction for NSLDS users. These three ideas are:

- **Outsourced Enrollment Tracking**, which provides for combining FSA and National Student Clearinghouse (Clearinghouse) enrollment data into a single repository and outsourcing Student Status Confirmation Reporting (SSCR) to the Clearinghouse
- **FP Data Feed Reengineering**, which aims at integrating FP data reporting with FSA's FP payment processes including:

  - Interest subsidy and special allowance payments for lenders
  - AMF/LPIF payments and reinsurance payments for guaranty agencies.

  It also includes the potential creation or adoption of a FFEL fetch network to support future data exchange with FSA and NSLDS II.
- **Common Record Extension**, which provides for expansion of the Common Record to include servicing information
  - Use members of PESC as a forum to drive this effort, including XML standards, record formats, and edit rules
  - Sequence adoption by lenders, services, GA's, and schools

The reengineering of NSLDS is also integrated with other reengineering efforts planned and underway as part of the overall FSA Modernization effort. These efforts include, but are not limited to, projects like Customer Relationship Management for FSA (CRM4FSA), Common Servicing for Borrowers (CSfB), CPS Reengineering and CSB Reengineering. Coordination of design and development across these efforts will be achieved through frequent interaction of the various project teams and FSA stakeholders to build common knowledge of processes, practices and integration points. This coordination will require long-term commitment and effort from each of the various initiatives and from FSA. In short, as initiatives are delivered, they should look to take advantage of common points of integration with their predecessors and to lay the foundation for those that follow.

Within this document, where applicable by function, a section has been added to highlight areas where this type of integration should be examined for inclusion in future releases of NSLDS II. A simple example of this type of integration point is the potential for the NSLDS SAFAR (Student Access) Website to be "consumed" by the CRM4FSA initiative so that maintenance of this site and its functionality would move closer to the student, toward a "single" point of student contact.

In addition to addressing the major objectives of overall NSDLS Reengineering and the greater FSA Modernization effort, these "big ideas" support - in a much broader context - several key themes prescribed by the Bush Administration:

- **Unify** . . . government operations to reduce redundancy and consolidate into larger operations that promise economic gains (reduced unit costs) through economies of scale
- **Simplify** . . . the work processes of government so that less "new work" and less rework is needed to produce the desired result. This translates to lower unit cost
- **Best Practices** . . . adopt the most effective federal government practices (policies and work processes) to achieve better customer service and lower unit costs

1.4 Contents

The content for the Preliminary System Design has been broken into the following major documents:

System Requirements – This is the next iteration of the System Requirements document for the NSLDS II Reengineering project that was published in April 2002. This document builds on the previous System Requirements document by focusing on the ten core functions. This document also elaborates on how each of these functions will be delivered in the first release of NSLDS II. It also touches on points of integration with other FSA Modernization initiatives to lay the groundwork for future NSLDS II enhancements that align with ongoing and upcoming projects. Further, this deliverable provides the revised high-level requirements as well as the detailed system requirements.

Report Content Descriptions & System Procedures - This document reflects the preliminary design for the reports and procedures of NSLDS II. Reports and procedures have been grouped together in this document since they both relate to ways in which NSLDS II data is used by the Department of Education and/or the external financial aid community. Reports represent ways in which users request specific information stored in NSLDS II to support their main functional areas, while procedures are used to produce calculations that compose key aspects of these functional areas.

User Interface Design – This document describes the two main applications in the NSLDS II architecture that serve as the gateway for accessing and manipulating data online. These applications are the Financial Aid Professional (FAP) website and the Student Access Financial Aid Review (SAFAR) website. Each application contains a variety of screens that support particular NSLDS II functional areas. This document identifies how and where users of the system will interface with it to perform functions and obtain information about the Title IV aid data housed in NSLDS II.

System Interface Design – This document defines how and for what data NSLDS II interfaces with various systems, both internal to FSA and other systems external to the Department (e.g., Guaranty Agencies, Schools, Servicers).

Technical Architecture Plan - This document starts by building the context of the existing legacy NSLDS and then contrasting it with standard data warehouse architecture. Next, there is a brief overview of the existing tools and architectures present in the current FSA environments. This is followed by the planned new architecture for the NSLDS II starting with a review of the database vendor selection process. The new architecture is then outlined in terms of the data acquisition, storage, access and presentation technical architecture for the reengineered NSLDS II. Lastly, the development and execution architectures for the NSLDS II environment are detailed.

Data Conversion and Migration Strategy - This document describes how data will be converted from the legacy NSLDS to the reengineered NSLDS II. The Data Conversion and Migration Strategy will define the NSLDS II data conversion approach, strategy, as well as the data conversion process that will be used to populate NSLDS II with data.

Test Plan – This document details the activities required to prepare for and conduct the test effort for NSLDS II Release 1. It also defines the scope of the test effort, including the items to

be tested. In addition, it documents the overall testing approach and defines the test environments required to conduct the testing effort. Finally, it identifies the responsible parties paired with the tasks they are to perform and the schedule to be followed in performing these tasks.

Implementation Plan – This document defines the timeline for the construction and deployment phases of work for NSLDS II. It also describes the phased approach for deploying NSLDS II and documents the core business capabilities that will be included within Release 1. In addition, it identifies the resources and skills required to deliver the system as well as project risks and mitigation strategies. The Implementation Plan is a working document and will be refined as the project progresses through the remaining phases of work.